(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 31 July 2003 (31.07.2003)

PCT

(10) International Publication Number WO 2003/063093 A3

(51) International Patent Classification⁷: G07C 9/00, G06F 3/033

G06K 9/00.

(21) International Application Number:

PCT/GB2003/000125

(22) International Filing Date: 15 January 2003 (15.01.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 0201232.6

19 January 2002 (19.01.2002) GH

- (71) Applicant (for all designated States except US): QUEEN MARY AND WESTFIELD COLLEGE [GB/GB]; University of London, London E1 4NS (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): MCOWAN, Peter, William [GB/GB]; Department of Computer Science, Queen Mary University of London, Mile End Road, London E1 4NS (GB). EVERITT, Ross, Alec, Joseph

[GB/GB]; 506 Green Lane Seven Kings, Ilford, Essex IG3 9LH (GB).

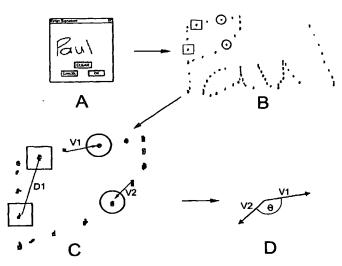
- (74) Agents: MARKS & CLERK et al.; 4220 Nash Court, Oxford Business Park South, Oxford, Oxfordshire OX4 2RU (GB).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

[Continued on next page]

(54) Title: AUTHENTICATION SYSTEMS



(57) Abstract: An authentication system is provided for authenticating a user's signature as electronically inputted into the system by a mouse or other manual input device providing an output indicative of its location when manipulated by the user. The system serves to extract angle and distance data relating different parts of the user's signature inputted into the system, and to store corresponding angle and distance data relating to a reference signature as previously inputted into the system during a training procedure. The extracted data is then compared by the system to the reference data stored by the system, and, where appropriate an output indicative of an appropriate match between the inputted signature and the reference signature is provided in dependence on the result of the comparison. Such a system provides an on-line dynamic biometric verification system that can be customised to multiple Internet based applications requiring secure authentication. The system requires no specialised equipment at the point of use, allowing access from any Internet capable computer with a mouse and Java compliant browser for example.



WO 2003/063093 A3



- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
- (88) Date of publication of the international search report: 26 February 2004

INTERNATIONAL SEARCH REPORT

Internat I Application No

PCT/gp 03/00125 CLASSIFICATION OF SUBJECT MATTER
PC 7 G06K9/00 G070 IPC 7 G07C9/00 G06F3/033 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) G06F G06K G07C Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data C. DOCUMENTS CONSIDERED TO BE RELEVANT Category 1 Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. X US 6 208 756 B1 (SUZUKI TOSHIO) 1-7 27 March 2001 (2001-03-27) Υ column 3, line 52 -column 4, line 12 8-14 column 4, line 38 -column 5, line 7 figures 1-3,4A,4B US 4 805 222 A (YOUNG JAMES R ET AL) 8-11,14 14 February 1989 (1989-02-14) column 2, line 27 -column 3, line 15 Α 1 column 10, line 35 -column 11, line 59 figures 6-14 EP 0 889 433 A (MITSUI HIGH TEC) 1-6 7 January 1999 (1999-01-07) Υ page 6, line 9 -page 7, line 21 13 page 10, line 50 -page 11, line 38 figures 6-9,15,16 Further documents are listed in the continuation of box C. Patent family members are listed in annex. ° Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the terrestant. *A* document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international 'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) involve an inventive step when the document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. O document referring to an oral disclosure, use, exhibition or document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 8 December 2003 17/12/2003 Name and malling address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentilaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016

Paraf, E

INTERNATIONAL SEARCH REPORT

International Application No PCT/CD 03/00125

		PCT/ਵੜ' 03/0	/00125	
C.(Continu	ation) DOCUMENTS CONSIDERED TO BE RELEVANT			
Category °	Chation of document, with indication, where appropriate, of the relevant passages	Re	levant to claim No.	
1	FR 2 684 469 A (THOMSON CSF) 4 June 1993 (1993-06-04)		12	
	column 2, line 16 -column 3, line 8 column 4, line 28 -column 5, line 11 page 13, line 16 - line 27; figures		1	
	US 6 111 976 A (RYLANDER JOHN E) 29 August 2000 (2000-08-29) column 3, line 16 - line 23 column 4, line 23 - line 52 column 5, line 44 -column 6, line 65 figures 1,3,4,6		1	
	-			
_	·			

INTERNATIONAL SEARCH REPORT

lation on patent family members

International Application No
PCT/cm 03/00125

Patent document dited in search report		Publication date		Patent family member(s)	Publication date
US 6208756	B1	27-03-2001	JP	3192468 B	2 30-07-2001
03 0203730	01		ĴΡ	5298490 A	12-11-1993
US 4805222	Α	14-02-1989	AU	6690986 A	25-06-1987
			BE	905962 A	
			CH	668844 A	
			CN	86108645 A	19-08-1987
			DE	3642614 A	1 25-06-1987
			DK	624386 A	
			ES	2003996 A	6 01-12-1988
			FI	865153 A	
			FR	2592195 A	
			GB	2184576 A	
			ΙT	1235762 B	28-09-1992
			JP	62157966 A	13-07-1987
			NL	8603272 A	
			NO	865224 A	
			\$E	8605446 A	24-06-1987
EP 0889433	Α	07-01-1999	JP	3140989 B	2 05-03-2001
			JP	11025225 A	
			JP	3139701 B	
			JP	11025226 A	
			AU	5270698 A	
			CA	2224540 A	
			EP	0889433 A	
			US	6144764 A	07-11-2000
FR 2684469	Α	04-06-1993	FR	2684469 A	1 04-06-1993
US 6111976	Α	29-08-2000	US	5917486 A	29-06-1999